FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

RICHARD L. SMITH; VANALCO, INC., *Petitioners-Appellants,* v. COMMISSIONER OF INTERNAL REVENUE, *Respondent-Appellee.*	No. 00-70124 TC No. 5955-98 OPINION

Appeal from a Decision of the
United States Tax Court

Argued and Submitted
July 9, 2002—Seattle, Washington

Filed August 12, 2002

Before: Thomas M. Reavley,* A. Wallace Tashima, and Johnnie B. Rawlinson, Circuit Judges.

Opinion by Judge Tashima

*The Honorable Thomas M. Reavley, United States Circuit Judge for the Fifth Circuit, sitting by designation.

COUNSEL

Ronald L. Berenstain, Perkins Coie LLP, Seattle, Washington, for the petitioners-appellants.

Annette M. Wietecha, Tax Division, U.S. Department of Justice, Washington, D.C., for the respondent-appellee.

OPINION

TASHIMA, Circuit Judge:

The Commissioner of the Internal Revenue Service ("Commissioner") disallowed deductions taken by appellant Vanalco, Inc. ("Vanalco") in 1992 and 1993 for expenses related to replacing the lining of aluminum smelting machines and portions of its facility's floors. The Commissioner deter-

mined that these items were capital expenditures depreciable under 26 U.S.C. § 263, rather than ordinary and necessary business expenses currently deductible under 26 U.S.C. § 162(a). The tax court upheld the Commissioner's determination on Vanalco's appeal. *See Vanalco v. Comm'r*, 78 T.C.M. (CCH) 251 (1999) ("*Vanalco I*"). We have jurisdiction over appeals from the tax court pursuant to 26 U.S.C. § 7482(a), and we affirm.

I. BACKGROUND[1]

A. Vanalco's Smelting Operations

During 1992 and 1993, Vanalco was in the business of smelting aluminum. Vanalco operated a smelting facility in Vancouver, Washington, that it purchased in 1987 from ALCOA, which had owned the facility since 1940.

Aluminum is made from bauxite, an ore that contains large amounts of aluminum hydroxide. Bauxite is refined to make aluminum oxide, also known as alumina. Aluminum is produced by use of the chemical process electrolysis, which involves the decomposition of a chemical compound into ions by passage of electricity through an electrolytic solution. During the smelting process, large buckets carried by overhead cranes dump alumina into hoppers attached on top of reduction cells ("cells").[2] The hoppers feed the alumina down the center of each cell, where it is dissolved in a bath of molten cryolite solution. An anode, which is a cubical carbon block attached to a copper rod, is then introduced into the cell, and an electrical current is passed from the anode, through the alumina/cryolite solution, and into a cathode, which is a carbon block that lines the bottom of each cell.

[1]The factual background is taken from the parties' joint stipulation of facts.

[2]The terms "cells" and "pots" are used interchangeably.

The electrical current separates the alumina into molten aluminum, which accumulates on top of the cathode at the bottom of the cell, and oxygen, which combines with the carbon anode at the top to produce carbon dioxide. This process produces aluminum continuously. At the Vanalco plant, the molten aluminum is removed from the cell every other day and transferred to a casting area called the ingot plant. In the ingot plant, the molten aluminum is poured into molds or combined with other alloys to be cast into pig or log shapes.

Vanalco used 636 low current density ("LCD") cells and fourteen "N-40" cells. The LCD cells were oblong steel shells approximately 22 feet long, 76 inches wide, and 36 inches high. The N-40 cells were the same in all material respects, except that they were shorter in length by about three feet. The shells sat on steel "cradles" over which anodes hung from a large steel superstructure.

Vanalco's 650 cells were divided equally into ten rooms, where the cells were spaced an average of 24 to 28 inches apart. Two rooms of cells were connected together in a cell line consisting of 130 cells, which were connected by busbars that allowed the cells to share the same electrical current.[3] The cells were arranged in such a way that a particular cell could be bypassed when necessary. A cell was bypassed or "shunted" from the line by disconnecting the riser from the superstructure and redirecting the flow of electricity. On average, eight to 10 cells were taken out of the line for replacement of their linings at any one time; however, without substantial modifications to its electrical system, Vanalco required a minimum of 112 functioning cells in order to operate its system on a sustained basis.

[3]Once the current flowed out of a cathode in one cell, it passed through collector bars onto a riser and into the anodes in the next cell.

B. **Cell Relining**

The lining of the cell is located in the cell shell and consisted of cathode blocks made of carbon materials, collector bars, refractory brick made of a lightweight silicate material, castable refractory, steel plate, insulation board, carbon sidewall blocks, carbon lining paste, and various nuts and bolts. The cell lining of each LCD cell consisted of eight cathode blocks that were 60 inches x 18 inches x 14 inches; two that were 60 inches x 15 inches x 14 inches; one that was 60 inches x 17 inches x 14 inches; two that were 30 inches x 18 inches x 14 inches; and two that were 30 inches x 17 inches x 14 inches. The average life of the cell lining was three years.[4]

Cells were monitored by Vanalco in two ways. One involved measuring the iron content of the molten aluminum within each cell twice a week. If the iron content increased above a certain level, it was a sign that the cell lining had eroded to expose the steel collector bars or the shell. Failure to replace the cell lining in this circumstance would cause the cell to eventually rupture, spilling molten metal onto the floor. In addition, the voltage of the cells was monitored to ensure that the cells were running efficiently. If the voltage could not be maintained at a designated level or within a specified range, it was an indication that there was something wrong with the cell lining. In this situation, if all other attempts to improve the operation of the cell failed, the cell would be bypassed and removed from service for relining.

Once the cell was shunted, the relining process involved removing the carbon anodes, cooling the cell for 20 hours, then adding water to further cool the cell and soften the lining

[4]Based on a simple averaging of each cell component's average life span, the life of a cell was calculated to be approximately 22 years. Based on a weighted average that takes into account the cost of each component as a fraction of the total cost, the life span of a cell was calculated as 40.009 years.

materials. The superstructure and shields were then removed, and the superstructure was taken to the potlining area for any necessary repairs. The cell lining crew then removed the cooled, solidified electrolyte and solid aluminum metal from the cell cavity, and the cell was dug with pot diggers to extract the remaining cell lining. The shell and cradle of the cell were removed and taken to the shell repair area with a crane and wagon. In the shell repair area, the shell and cradle were straightened and necessary welding repairs were made. The repaired shell and cradle were put in a vacant spot in the cell line, which was usually different from their original location.

The replacement lining was installed in layers. First, the bottom of each cell was lined with two layers of insulating block cemented together. The cell lining crew then placed a layer of sheet metal on top of the insulating block, which formed a vapor barrier. Two layers of heavy refractory fire brick were added on top of the vapor barrier and the cathode blocks with embedded collector bars were placed in rows on top of the refractory fire brick. The cell lining crew then installed the carbon sidewall blocks around the sides of the shell to cover the area from the top of the cathode blocks to the top of the shell. Finally, the crew installed a ramming paste around and between the cathode blocks to create a solid and smooth cell cavity.

After the lining was replaced, the collector bars were attached to the ring bus, the superstructure was reinstalled on top of the cell, new anodes were hung from the superstructure, and cell shields were reinstalled over the shell. At this point, the cell was reconnected to the cell line, although it was not immediately placed back into service. Instead, it remained empty for approximately 48 hours while the new lining and cathode blocks "baked." The average time for a cell to be out of service for relining was 15 days.

During the 1992-1993 period, the cost for the replacement of cell lining, including labor and allocable overhead expenses, was $17,933.[5] In addition, Vanalco incurred approximately $5,401 per cell to tear out the old cell lining, as well as miscellaneous expenses. Vanalco replaced 206 cell linings in 1992 and 192 cell linings in 1993. Vanalco employed a cell lining crew of 22 to 26 workers. It reported a repair expense for relining of $4,411,245 in 1992 and $4,224,991 in 1993.

C. **Floor Repair**

Vanalco had ten cell rooms,[6] each approximately 722 feet long and 47 feet wide. Each room was divided into three sections: a center section where the cells were located, an area to one side of the cells known as the "tap end," and a narrower area to the other side of the cells called the "duct end." The tap end of each room, which varied in size from 7,000 to 8,500 square feet, was where the front end loaders operated, metal was tapped, spent anodes were placed after removal, and excess bath was removed from the cells.

Originally, each cell room had a concrete subfloor strengthened with iron rebar overlaid with bricks. The brick on top of the floor operated as an insulator to prevent the risk of electrocution resulting from contact with the concrete rebar. This type of floor had been used for over 40 years with the brick replaced as necessary by ALCOA using a full-time brick replacement crew. Over time, however, the brick floors began to wear down (in some areas to the sub-floor), creating safety and production concerns. The brick floor was damaged due to mechanical equipment traffic, as well as the fact that it came into direct contact with molten aluminum and bath, crucibles of aluminum, and the spent anodes removed from the cells.

[5]The parties stipulated that the total cost for replacing each component of a cell was $99,666.

[6]The cell rooms were numbered 4, 6, 8, 10, 12, 14, 16, 18, 20, and 22.

The old brick floor was also very irregular from the replacement of sections of floor bricks over the years, creating a safety hazard for employees who could easily trip and fall. In fact, Vanalco reported 21 accidents during the first half of 1992 due to the irregular floor surface.

Between 1991 and 1995, portions of the brick floors of the tap end and center passage sections of each cell room were removed and replaced with Fondag cement. Fondag cement was more pliable than regular cement, set much more quickly, and was easier to patch. The Fondag cement had other advantages over brick: it was easier to clean and repair; it became electronically non-conductive in 24 hours, in comparison to seven days or longer for brick; and it enhanced safety by creating a more level surface and leaving a smoother wearing pattern.[7] In 1992, Vanalco replaced bricks with Fondag cement in the tap end in cell room 20, the tap end and center areas of cell rooms 16 and 22, and the center areas of cell rooms 10, 12, 14, and 18. In 1993, Vanalco replaced bricks with Fondag cement in the tap end areas in cell rooms 8 and 10, as well as the tap end and center areas of cell rooms 14 and 18.

In connection with these replacements, Vanalco reported $386,327 in expenditures in 1992 and $408,154 in 1993. The bulk of the expenditures were for tap end repairs.

D. **Procedural History**

Vanalco filed an S corporation income tax return for 1992, in which it deducted $4,411,245 for cell relining and $386,327 for floor replacement as ordinary and necessary business expenses. In its 1993 return, Vanalco similarly deducted $4,224,991 for cell relining and $408,154 for floor

[7]Vanalco had tried patching the floors with Portland cement; however, this did not prove satisfactory because it required a longer drying time (approximately two weeks) and did not withstand heavy use as well as the Fondag cement.

replacement. The Commissioner sent two separate notices of Final S Corporation Administrative Adjustment ("FSAA") to Vanalco's tax matters person, appellant Richard Smith. The FSAAs disallowed the 1992 and 1993 cell relining and floor replacement deductions under § 162(a), instead requiring that the costs be treated as capital expenditures and depreciated under § 263. Vanalco petitioned the tax court for a redetermination. The tax court upheld the Commissioner's determination that the cell relining and floor replacement costs were capital expenditures under § 263 and not ordinary and necessary business expenses. *Vanalco I*, 78 T.C.M. (CCH) 251. Vanalco filed this timely appeal.

II. STANDARD OF REVIEW

We review the tax court's conclusions of law *de novo*. *Schachter v. Comm'r*, 255 F.3d 1031, 1033 (9th Cir. 2001), *cert. denied*, 122 S. Ct. 65 (2001).[8] The tax court's factual findings, including factual inferences drawn from a stipulated record, are reviewed for clear error. *Moss v. Comm'r*, 831 F.2d 833, 837 (9th Cir. 1987). "Mixed questions of law and fact that require the consideration of legal concepts and involve the exercise of judgment about the values underlying legal principles are reviewable *de novo*." *Mayors v. Comm'r*, 785 F.2d 757, 759 (9th Cir. 1986) (citation omitted).

III. ANALYSIS

[1] Vanalco contends that the tax court mischaracterized expenses incurred in 1992 and 1993 related to cell relining and floor replacement as capital expenditures subject to depreciation under § 263, rather than ordinary and necessary business expenses deductible against current income under § 162(a). Section 162(a) allows for the deduction of "all the

[8]The tax court's application of the law to a stipulated factual record is subject to *de novo* review. *Sennett v. Comm'r*, 752 F.2d 428, 430 (9th Cir. 1985).

ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business." 26 U.S.C. § 162(a). In contrast, § 263 disallows deduction for a capital expenditure, which is "[a]ny amount paid out for new buildings or for permanent improvements or betterments made to increase the value of any property or estate." *Id.* § 263(a)(1). "The primary effect of characterizing a payment as either a business expense or a capital expenditure concerns the timing of the taxpayer's cost recovery: While business expenses are currently deductible, a capital expenditure usually is amortized and depreciated over the life of the relevant asset . . . ." *INDOPCO, Inc. v. Comm'r*, 503 U.S. 79, 83-84 (1992).

[2] In general, "an income tax deduction is a matter of legislative grace and . . . the burden of clearly showing the right to the claimed deduction is on the taxpayer." *Interstate Transit Lines v. Comm'r*, 319 U.S. 590, 593 (1943) (citations omitted). In order to qualify for a deduction under § 162(a), "an item must (1) be 'paid or incurred during the taxable year,' (2) be for 'carrying on any trade or business,' (3) be an 'expense,' (4) be a 'necessary' expense, and (5) be an 'ordinary' expense." *Comm'r v. Lincoln Sav. & Loan Ass'n*, 403 U.S. 345, 352 (1971). The term "necessary" imposes "only the minimal requirement that the expense be 'appropriate and helpful' for 'the development of the [taxpayer's] business.' " *Comm'r v. Tellier*, 383 U.S. 687, 689 (1966) (alteration in the original) (quoting *Welch v. Helvering*, 290 U.S. 111, 113 (1933)). An "ordinary" expense must be related to a transaction "of common or frequent occurrence in the type of business involved." *Deputy v. Du Pont*, 308 U.S. 488, 495 (1940) (citation omitted).

[3] Treasury regulations provide that no deductions are allowed for amounts expended "(1) to add to the value, or substantially prolong the useful life, of property owned by the taxpayer, such as plant or equipment, or (2) to adapt property to a new or different use." 26 C.F.R. § 1.263(a)-1(b). The costs of incidental repairs, however, are typically deductible:

> The cost of incidental repairs which neither materially add to the value of the property nor appreciably prolong its life, but keep it in an ordinarily efficient operating condition, may be deducted as an expense . . . . Repairs in the nature of replacements, to the extent that they arrest deterioration and appreciably prolong the life of the property, shall either be capitalized and depreciated in accordance with section 167 or charged against the depreciation reserve if such an account is kept.

26 C.F.R. § 1.162-4.[9]

A. **Cell Relining Expenses**

The tax court held that "replacing the cell linings cannot be classified as an incidental repair, and the cost must therefore be capitalized." *Vanalco I*, 78 T.C.M. (CCH) at 256. The tax court based this ruling on a number of factors: (1) "the cell lining performs a function that is vital and integral to the smelting process;" (2) "the cell lining has a life that is independent of the cell unit as a whole, and the cost of the lining as a percentage of the total cost of the cell unit is substantial;" (3) "the replacement cell lining material is a very substantial portion of the cell unit;" and (4) "[i]n replacing the lining the cell essentially is rebuilt, thereby obtaining a new life expectancy of 3 years." *Id.* Vanalco takes issue with several aspects of the tax court's ruling, which we address in turn.

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[9]Some courts have employed a "put" versus "keep" distinction to identify capital expenditures and business repair expenses:

> The test which normally is to be applied is that if the improvements were made to "put" the particular capital asset in efficient operating condition, then they are capital in nature. If, however, they were made merely to "keep" the asset in efficient operating condition, then they are repairs and are deductible.

Walling's Estate v. Comm'r, 373 F.2d 190, 192-93 (3d Cir. 1967) (citation omitted); *accord Moss*, 831 F.2d at 835.

1. *The Cell as Separate Property*

As a threshold matter, Vanalco argues that the tax court erred by treating each individual cell, rather than an entire cell line, as the appropriate unit of property for the purposes of determining the nature of the expenses incurred. This matters, Vanalco contends, because viewing the relevant unit of property as the entire cell line means that the cell linings under repair during 1992 and 1993 would have constituted a very small physical and economic component of that property. The relative cost of the relining could affect its tax treatment since under *Libby & Blouin, Ltd. v. Comm'r*, 4 B.T.A. 910, 914 (1926), "[e]xpenditures for small parts of a large machine, in order to keep that machine in an efficient working condition . . . are . . . ordinary and necessary expenses and are not capital expenditures."

To support its position that the cell line is the appropriate unit of property, Vanalco points to the stipulated fact that, in the absence of substantial modifications to its electrical system, it could not conduct smelting on a sustained basis without a minimum of 112 cells in operation. This, according to Vanalco, demonstrates that it is the interconnected cell line, not the cell itself, that should be the focus of inquiry. In contrast, the Commissioner notes that there is nothing in the record to suggest that an individual cell could not operate by itself; rather, it appears that the need for a minimum of 112 operating cells stemmed from the design of Vanalco's electrical system, not the inherent characteristics of the cells themselves. Each cell could independently produce aluminum and was essentially interchangeable, capable of being withdrawn from the cell lines for repair purposes and replaced by a different cell.

The question, then, is whether the realities of Vanalco's smelting operations justify viewing the cells as independent units or constituent parts of a larger whole. The resolution of this issue requires drawing inferences from the stipulated

facts, rather than arriving at an independent legal conclusion and therefore is subject to the clearly erroneous standard of review. The tax court, albeit not explicitly, found that the cells were sufficiently free-standing to constitute property separate and apart from the interconnected cell lines. We cannot say that this finding was clearly erroneous and therefore we reject Vanalco's contention that the cell line should be deemed the appropriate unit of property.[10] As to Vanalco's alternative argument that the cell, rather than the cell lining, should be viewed as the relevant property, it is clear that the tax court implicitly accepted this position—a judgment in which we concur. We therefore treat the cell as the relevant unit of property for the purposes of this appeal.

2. *Material Increase in Value*

Vanalco next contends that the tax court erred by failing to conclude that the cell relining expenses did not increase the value of the cell. Deductions are not allowed for expenditures that materially add value to property. *See* 26 C.F.R. §§ 1.162-4, 1.263(a)-1(b). Vanalco asserts that the tax court misapplied *Plainfield-Union Water Co. v. Comm'r*, 39 T.C. 333, 338 (1962), *nonacq.*, 1964-2 C.B. 3, in which the tax court stated that the proper test for determining whether an expenditure materially increased the value of property "is whether the expenditure materially enhances the value, use, life expectancy, strength, or capacity as compared with the status of the asset prior to the condition necessitating the expenditure."

[10]The cases Vanalco cites do not require a different result. In *Ingram Indus. v. Comm'r*, 80 T.C.M. (CCH) 532, 538 (2000), the tax court simply determined that tug boat engines should not be treated separately from the tug boats themselves in determining whether engine repair costs were business expenses or capital expenditures. There is nothing to suggest a strong analogy between tugboat engines and individual aluminum smelting cells in a cell line. Likewise, *Badger Pipe Line Co. v. Comm'r*, 74 T.C.M. (CCH) 856, 859 (1997), involved the relocation of a small stretch of continuous pipeline—a fact situation so distinct from the present context that it cannot be considered controlling.

According to Vanalco, the tax court erred by comparing the value of the cells after the linings had deteriorated with their value after relining had occurred. Vanalco argues that had the tax court engaged in the proper analysis—assessing whether relining materially increased the value of the cells relative to their value before the linings wore out—it would have decided in favor of the deductibility of the expenses, since relining simply returned the cells to their condition before the linings deteriorated.

Viewed in isolation, Vanalco's argument regarding *Plainfield-Union*'s value test makes intuitive sense: any increase in property value attributed to repairs must be assessed relative to the condition of the property in its original functioning state. Otherwise, every repair would be deemed a capital expenditure since it would always be the case that a repair would enhance the value of property relative to its deteriorated condition. However, the interpretation that Vanalco proposes similarly proves too much. Clearly, any replacement of a machine's worn out part would return the machine back to its condition prior to the deterioration of the part. Under this logic, all repairs would be deductible under § 162(a), no matter how substantial they might be. Thus, replacing the engine in a car would constitute a deductible business expense to the same extent as would replacing the tires. This result would be contrary to existing precedent, *see LaSalle Trucking Co. v. Comm'r*, 22 T.C.M. (CCH) 1375, 1383 (1963) (holding that the cost of replacing a truck engine was not deductible as a repair), and would render meaningless any distinction between a business expense and capital expenditure.

[4] Thus, it is insufficient merely to look at increased value as the determinative factor for the purposes of characterizing the cell relining costs. Instead, a court must look beyond the increased value test to other indicia of deductibility or capitalization. For instance, it is inescapable that the relative importance of a component part will play a vital role in determining whether its replacement is treated as an ordinary and neces-

sary business expense or a capital expenditure. That is, in order to determine whether a repair is "incidental" in the sense that it is only necessary to maintain property in an efficient operating condition, the significance of the part under repair to the operation of the property is a critical inquiry. For this reason, we hold that the tax court did not err in focusing on the essential functional nature of the cell lining rather than its value-enhancing attributes.[11]

In addition to its argument regarding *Plainfield-Union*, Vanalco asserts that the court should look at two factors in determining whether relining costs materially increased the value of the cells: (1) whether the costs enhanced the functionality of the cells, and (2) the cost of relining relative to the cost of replacing the entire cell.

[5] With respect to the functionality factor, Vanalco argues that capitalization under § 263 is not warranted because the cell's functionality was not improved, nor was its use or ability changed, as a result of the new lining. Although the tax court did not address the functionality issue directly, it did suggest that relining enhanced functionality by noting that "the productive phase of each cell's cycle ends upon the exhaustion of its lining." *Vanalco I*, 79 T.C.M. (CCH) at 256. In other words, the cell itself loses functionality upon the deterioration of the cell, making the relining process integral

[11]In fact, Vanalco's entire argument regarding increased value under *Plainfield-Union* is somewhat curious given that the tax court never explicitly addressed the issue. Vanalco seems to argue that the tax court's failure to specifically conclude that the value of the cells was not increased by relining implies that it believed that relining had in fact resulted in increased value. However, there is nothing the in record to support this argument. Moreover, to the extent that Vanalco suggests that the tax court erred by simply ignoring the increased value issue, this implies that the increased value test is determinative of the tax characterization of the expenses, which is not the case. Rather, as *Plainfield-Union* itself makes clear, increased value is one factor among many that a court may consider in determining the appropriate tax treatment of any given expense. *See* 39 T.C. at 338.

to "putting" the cell back into its original functional state. *See Walling's Estate*, 373 F.2d at 192-93. Again, this is not inconsistent with *Plainfield-Union*, since we are dealing here with the effective reconstitution of the cell upon the deterioration of the lining. Clearly, this process of reconstitution augments the functionality of the cell, restoring it from a state of functional exhaustion to full functional operation. Given this process of reconstitution, the fact that relining does not confer additional functionality above and beyond that which existed prior to the deterioration of the lining is not controlling.[12]

With respect to the issue of relative cost, Vanalco argues that the tax court erred in concluding that relining costs were not deductible under § 162(a) based on the fact that "the cost of the lining as a percentage of the total cost of the cell unit is substantial." *Vanalco I*, 78 T.C.M. (CCH) at 256. According to Vanalco, the cost of relining is minor (less than one-fifth) relative to the cost of replacing all of the parts in the cell. Even accepting the tax court's calculation that the relining cost was 22.21% of the cost of a completely rehabilitated cell unit, Vanalco contends that the relining cost is still *de minimis*.

[6] We agree with the tax court that the substantial relative cost of relining weighs in favor of characterizing it as a capital expenditure. The record is clear that the cell lining was, aside from the cost of replacing a cell's superstructure (which

[12]The cases Vanalco cites in favor of its argument do little to buttress its position, as they all deal with factually dissimilar contexts. *See Ingram Indus.*, 80 T.C.M. (CCH) at 536 (stating that the cleaning and inspection of towboat engines does not increase its horsepower); *Jacks v. Comm'r*, 55 T.C.M. (CCH) 968, 970 (1988) (holding that transmission repair costs were deductible business expenses because the repair simply restored the CAT loader "to the operating condition it was in prior to the necessity of incurring the expense"); *Libby & Blouin*, 4 B.T.A. at 914 (concluding that the costs associated with replacing copper tubes in a sugar evaporator were not capital expenditures since the expenses "merely kept the evaporator in an ordinary, efficient working condition").

occurred only once every 54 years), by far the most expensive part of the cell to replace,[13] supporting the tax court's conclusion that the lining was a critical component of the cell that required treatment as a capital expenditure. Again, the cases cited by Vanalco do not compel a different result, but rather highlight the highly fact sensitive nature of the inquiry. *See Dominion Res. Inc. v. United States*, 219 F.3d 359, 372 (4th Cir. 2000) (requiring capitalization of $2.2 million in environmental cleanup costs where the appraised value of the property was less than $1.6 million); *Jacobson v. Comm'r*, 47 T.C.M. (CCH) 499, 502 (1983) (allowing a deduction for $5,000 in repairs to a rental property purchased for $30,000); *LaSalle Trucking Co.*, 22 T.C.M. (CCH) at 1383 (denying deductibility for a new engine, truck cab, and petroleum tank that cost approximately $8,500 in comparison to the cost of $16,000 to $17,000 for a new truck). Accordingly, we reject Vanalco's argument that the tax court erred by failing to conclude that the relining expenses did not materially increase the value of the cells.

3. *New Life Expectancy*

Vanalco next contests the tax court's conclusion that the process of relining gave the entire cell a new life expectancy of three years. Vanalco asserts that this conclusion was error because the cell lining contributes very little to the average life of the entire cell. Specifically, Vanalco notes that the stipulated facts indicate that the weighted average life of a cell is approximately 40 years, with the lining contributing only one percent of this average life. Thus, according to Vanalco, this case is analogous to *Libby & Blouin*, 4 B.T.A. at 912-14, where the board of tax appeals held that the cost of replacing copper tubes with a two-to-four-year life span in a sugar evaporator machine with a 20-year life span was deductible as a

[13]Vanalco notes that the yearly cost of anode replacement far exceeded the yearly cost of relining, since the anodes had to be replaced every two weeks.

business expense. Vanalco distinguishes the case cited by the tax court, *Ruane v. Comm'r*, 17 T.C.M (CCH) 865, 871 (1958), since that case dealt with costs associated with the reconditioning of an entire coke oven that had a life expectancy of only three to four years.

[7] Again, resolution of this issue depends primarily on how one characterizes the relationship of the cell lining to the entire cell. Implicit in the discussion of a "new life expectancy" is the notion that if a component part is so integral to the overall functioning of a machine, its replacement effectively confers a new life span on the machine equivalent to the life of the part. Thus, if one were to agree with Vanalco that the lining is a relatively minor, frequently worn out part of a larger, more durable cell, there would be no basis to conclude that replacing the lining would breathe new life into the cell as a whole. In contrast, if one accepts the tax court's position that the cell lining is critical to the functioning of the cell and its replacement essentially constitutes a refurbishment of the entire cell, then it could be said that relining would confer a new life expectancy equivalent to that of the lining itself.

[8] In light of the entire process of relining stipulated in the record, we conclude that the lining is a critical component of the cell and its replacement is tantamount to reconstituting the cell itself. Specifically, cell relining involved taking individual cells offline and rerouting the electrical current through the remaining cells in the cell line; removing the superstructure and cradle to a repair area where they were separately attended to; adding the cell lining in a number of layers, which included insulating block, heavy refractory fire brick, carbon sidewall blocks, and ramming paste; replacing the superstructure, anodes, and cell shields; and leaving the new lining and cathode blocks to bake for 48 hours. The entire process generally lasted 15 days and cost in excess of $20,000 dollars. Given that this relining process effectively rebuilt the cell, the tax court did not err in ruling that relining conferred a new life expectancy on the cell of three additional years.

4. *Prolonged Life*

In a related argument, Vanalco objects to the tax court's determination that the cell relining prolonged the useful life of the cell. Vanalco argues here that the tax court (1) misapplied *Plainfield-Union*; (2) improperly concluded that the repair of "essential" components requires capitalization, and (3) erred in characterizing the cell lining as a substantial contributor to the cell's overall functioning. These arguments largely track those already analyzed and, for similar reasons, fail.

[9] With respect to the application of *Plainfield-Union*, Vanalco renews its contention that the tax court incorrectly compared the life span of the cell after relining with the life span of the cell after the lining had deteriorated. As we have already discussed, given the essential nature of the cell lining to the functioning of the entire cell, it was not error for the tax court to conclude that relining prolonged the cell's life expectancy.

Vanalco asserts that a rule requiring capitalization for costs incurred replacing an essential machine part goes too far, effectively authorizing the Commissioner to require capitalization of even minor working parts that are critical to the overall functioning of a larger machine. We disagree that an essential component rule necessarily leads to this result and reiterate that the rule Vanalco proposes is unworkable. In particular, the interpretation of *Plainfield-Union* that Vanalco suggests—one that would compare a machine's life span before a part deteriorated and after it was replaced—would permit deductions under § 162(a) for any repair expense, no matter how substantial, since it would always be the case that replacement simply restored the machine to its previous working condition. Courts have recognized this, at least implicitly weighing of the importance of the machine part at issue in analyzing deductibility versus capitalization. *See, e.g.*, *W. Va. Steel Corp. v. Comm'r*, 34 T.C. 851, 859 (1960) (holding that

the cost of replacing engine in a delivery vehicle was a capital expenditure); *Jacks*, 55 T.C.M. (CCH), at 970 (ruling that cost of engine replacement was capital in nature); *Hudlow v. Comm'r*, 30 T.C.M. (CCH) 894, 923 (1971) (concluding that the repairs done on forklifts represented "the replacement of major parts . . . to put the machines into such condition that they would no longer be unduly susceptible to breakdowns"). These cases weaken Vanalco's slippery slope argument, demonstrating that courts are capable of distinguishing essential parts from minor working parts of a machine in characterizing capital expenditures.

Vanalco next contends that, even if it were to accept an essential component rule, the cell linings in this case should not be characterized as essential to the functioning of the cell as a whole. Vanalco reiterates its argument that the cell lining contributes approximately one percent to the weighted average life of the cell as a whole and physically only constitutes a minor part of the overall cell structure—the lining is slightly over 14 inches thick while the cell structure rises to 10 feet high. On this basis, Vanalco asserts that the "small parts of a large machine" standard of *Libby & Bouin*, 4 B.T.A. at 914, should apply to permit deduction as a business expense. However, to the extent that Vanalco argues that the tax court erred as a factual matter, there is no basis for concluding that the tax court's decision was clearly erroneous. Even Vanalco admits that "the volume of the cell lining is roughly a quarter of the cell as a whole." Moreover, it is clear from the tax court's opinion that it was not viewing size alone as the determinative factor in concluding that the cell lining is an essential component of the cell.

Vanalco contends that the tax court's ruling on the essential nature of the cell lining also constituted error. We disagree. Indeed, despite Vanalco's attempts to distinguish it, this case is controlled by *Buffalo Union Furnace Co. v. Helvering*, 72 F.2d 399 (2d Cir. 1934). *Buffalo Union* addressed the proper tax treatment for costs incurred for relining blast furnaces,

which was necessary an average of every two to two-and-a-half years. *Id.* at 401. In holding that the relining costs were capital expenditures, Judge Learned Hand observed that "[t]he furnace had to be laid off for a considerable time, and the whole interior cleaned of the old brick and relined with the new; the expense of this was roughly from $50,000 to $100,000 for each furnace." *Id.* at 402. On this basis, Judge Hand concluded that it was "more natural" to treat these costs as depreciable capital expenditures. *Id.* We follow *Buffalo Union* and affirm the tax court's treatment of the cost of cell relining as a depreciable capital expenditure.

5. *Provision of Benefits Beyond One Year*

Finally, Vanalco takes issue with the tax court's consideration of whether Vanalco's relining expenditures allowed it to realize benefits beyond the year in which the expenditures were incurred. Vanalco suggests that because other courts have not adhered to this one-year guidepost, the tax court somehow erred in doing so here. It is well established, however, that courts may consider the accrual of benefits beyond one year as a factor that weighs in favor of capitalization: "Although the mere presence of an incidental future benefit—'some future aspect'—may not warrant capitalization, a taxpayer's realization of benefits beyond the year in which the expenditure is incurred is undeniably important in determining whether the appropriate tax treatment is immediate deduction or capitalization." *INDOPCO*, 503 U.S. at 87; *see also United States v. Wehrli*, 400 F.2d 686, 689 (10th Cir. 1968) (noting that the one-year rule serves as a "guidepost for the resolution of the ultimate issue"). The tax court, therefore, did not err in relying on the one-year guidepost as one factor supporting its decision.

[10] In conclusion, we affirm the tax court's determination that the costs incurred by Vanalco in 1992 and 1993 associated with cell relining were capital expenditures under § 263.

B. **Floor Replacement Expenses**

The tax court also held that Vanalco's costs in connection with replacing the tap end and center sections of various cell room floors constituted a capital expenditure. In arriving at this conclusion, the tax court emphasized the substantial nature of the repairs in question, the functional improvement created by replacing the brick floor with Fondag cement, and the fact that the improved floors made the property more valuable to Vanalco in its business. *Vanalco I*, 78 T.C.M. (CCH) at 257-58. Vanalco contends that the tax court erred because these repairs did not materially increase the value or prolong the life of its property.

1. *Material Increase in Value*

Vanalco's primary argument is that, because it did not replace the entire floor in any of the cell rooms, it did not materially increase the value of the property and therefore the costs associated with the repairs should be deductible.

The resolution of this issue is complicated somewhat by the fact that the record does not disclose the precise dimensions of the repair work. Vanalco argues that the extent of the repairs was insubstantial, pointing to the fact that the tap end is approximately 25 percent of the cell room floor area and the bulk of expenditures during the tax years in question were for tap end repairs. In contrast, the Commissioner contends that in the rooms where both the tap end and center areas were repaired, almost 50 percent of the floor space was replaced. Vanalco contests this figure, stating that in the rooms where the center areas were repaired, the record suggests that only the areas around—and not under—the cells were replaced. The tax court did not definitively resolve this question; rather it based its conclusion that the repairs in question were "substantial" on the fact that between 1991 and 1995, Vanalco engaged in a project of replacing the brick floors in the tap

end and center sections of all of its cell rooms with Fondag cement.

Thus, during the specific tax years in question, the most one could say is that it is likely that between 25 and 50 percent of the floors in cell rooms 10, 14, 16, 18, and 22 were replaced, as these rooms received repairs to both the tap end and center areas. In evaluating this figure, it must be kept in mind that the cells themselves took up a large portion of the center areas and were probably not moved during the repairs. In addition, with respect to rooms 8, 12, and 20, where only tap end or center area repairs were made, the extent of replacement was likely somewhere below 25 percent of the floor.

Vanalco argues that these repairs did not materially increase the value of the floors, citing several different cases for the proposition that only the replacement of an entire floor area, or something close thereto, constitutes a capital expense. *See, e.g.*, *Denver & Rio Grande W. R.R. v. Comm'r*, 279 F.2d 368, 373 (10th Cir. 1960) (ruling that the cost of replacing all the floor planks of a viaduct was a capital expenditure); *Phillips & Easton Supply Co. v. Comm'r*, 20 T.C. 455, 460 (1953) (holding that the replacement of an entire building floor was a capital expenditure). These cases, however, do not articulate a bright line rule regarding the extent of repairs necessary to constitute a substantial replacement—in other words, they do not clearly indicate a threshold percentage beneath which the extent of repairs is considered too small to warrant capitalization. Given the facts of this case, we agree with the tax court that the repairs here were substantial enough materially to increase the value of the floors as a whole. This is especially true in light of the fact that during the period from 1991 to 1995, Vanalco was engaged in an ongoing process of floor replacement that resulted in significant repairs to the floors in every one of the cell rooms.[14]

[14]In this sense, one could argue that the repairs in question were made pursuant to a longer-term plan to repair the tap end and center areas in all

Moreover, the scope of repairs is not the only factor in characterizing costs as ordinary expenses or capital expenditures. The tax court was correct in concluding that the repairs to the cell room floors were capital in nature based on the enhanced functionality of the floors after the new portions were installed. In particular, we agree with the tax court that the use of Fondag cement provided significant functional benefits over the previous brick floors that materially increased their value. In contrast to brick, Fondag cement was easier to clean and repair, became electrically non-conductive in a shorter period of time, and wore down in a smoother pattern. This certainly would increase the value of the floor in the context of Vanalco's business, reducing costs associated with repair and mitigating the risk of injury.

Vanalco cites *Hudlow*, 30 T.C.M. (CCH) at 922-23, in support of its position that the floors' value was not increased, but that case is distinguishable on the facts. Specifically, the tax court in *Hudlow* concluded that the taxpayer did not replace the floor, but simply poured concrete over the preexisting floor in a leased facility. *Id.* In determining that the concrete overlay did not materially increase the value of the

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of the cell rooms. Typically, "an expenditure made for an item which is part of a 'general plan' of rehabilitation, modernization, and improvement of the property, must be capitalized, even though, standing alone, the item may appropriately be classified as one of repair." *Wherli*, 400 F.2d at 689. Although the tax court did not specifically find that Vanalco had engaged in a general rehabilitation plan, it suggests that Vanalco's ongoing process of replacing brick floors with Fondag cement during the tax years in question was a relevant factor in its decision. We agree that Vanalco's multiyear replacement activities weighs in favor of treating its expenditures as depreciable under § 263. To the extent that the repairs were part of an overall plan, this would also distinguish the present situation from *Farmers Creamery Co. v. Comm'r*, 14 T.C. 879 (1950), *acq.*, 1954-1 C.B. 4, *nonacq.*, 1954-1 C.B. 8, which Vanalco cites. In that case, although the tax court held that costs to repair less than half of a floor were deductible, it specifically noted that they "were not made in accordance with any overall plan." *Id.* at 880.

floor, the tax court relied on its assessment that, although there was some functional value to having a sturdy floor with uniform thickness, that value was counterbalanced by the fact that the concrete eliminated drains that had previously been in the floor. *Id.* Here, there is no countervailing detriment weighing against the benefits of the Fondag cement.

Similarly, Vanalco's attempt to distinguish *Phillips & Easton*, 20 T.C. at 460, upon which the tax court relies, also fails. Although, as Vanalco points out, that case involved the replacement of an entire floor, in concluding that the replacement costs were capital expenditures, the tax court emphasized the fact that the old floor was thin and worn, while the new floor was thicker and made for heavy wear. *Id.* Likewise, in this case there is no dispute that the brick was replaced because the wear and tear caused by equipment traffic and the molten bath from the cells created a significant safety concern. The Fondag cement was selected because, after experimenting with other types of concrete, Vanalco concluded that it would provide the most satisfactory functional benefits. Accordingly, we agree with the tax court's determination that Vanalco's floor repair expenditures increased the property's value and were therefore capital in nature.

2. *Prolonged Life*

Vanalco's final argument is that the tax court erred because there is no evidence that the repairs in question prolonged the life of cell room floors. The tax court, however, did not rest its decision on whether the floor repairs resulted in prolonged life. Instead, it properly grounded its decision on the increased functional and material value conferred by the improvements. Since the tax court was not obligated to address the prolonged life issue, *see* 26 C.F.R. § 1.263(a)-1(b) (stating that expenses are not deductible if they "add to the value, *or* substantially prolong the useful life" of property (emphasis added)), there was no error.

IV. CONCLUSION

For the foregoing reasons, the decision of the tax court is **AFFIRMED**.